Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use of the 12.2-12.7 GHz Band	)	WT Docket No. 20-443
	)	
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7-24 GHz	)	GN Docket No. 17-183
	)	

COMMENTS OF SPACE EXPLORATION HOLDINGS, LLC

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SUMMARY

SpaceX appreciates the Commission's interest in ensuring that spectrum bands are put to their highest and best use. Indeed, SpaceX encourages the Commission to rapidly initiate a proceeding to examine whether other spectrum bands, such as AWS-4, have been put to their highest and best use over the past decade. But with regards to the 12 GHz Band, the answer is clear—next-generation satellite licensees have deployed their spectrum at an unprecedented pace, quickly bringing critical connections to otherwise unserved Americans in the hardest to reach corners of the country, which is also why the Commission voted unconditionally to include 12 GHz as part of the Rural Digital Opportunity Fund. Any limitations on the use of the band for satellite services will inevitably harm otherwise unserved Americans, simply to accommodate the desires of spectrum speculators with no real plans to deploy. Looking at other services in the band, one conclusion is inescapable: the current MVDDS allocation is far from the highest and best—or even an average use—of the spectrum. Further, the pending substantial service showings of the MVDDS licensees should be rejected as wholly insufficient and the service should be eliminated. Removal of this failed service and immediate termination of the MVDDS licenses will allow the dynamic next-generation satellite market to more quickly and more robustly deliver high-quality broadband to otherwise unserved Americans across the country.

In fact, it appears the largest MVDDS licensee—DISH Network— is providing effectively no service in the 12 GHz Band, despite its claims to the Commission. The services DISH purports to offer require consumers to spend hundreds of dollars for user equipment for a service that is of no use to any customer. As a result, DISH may have no more than a small number of customers across all of its licenses across all of the country. This failure to deploy its MVDDS licenses comes on the heels of a decade and half of DISH's requests for extensions of time so it could avoid

deploying any service whatsoever using the MVDDS licenses. But while DISH and the other MVDDS licensees have utterly failed to serve the public, their phantom use of the 12 GHz Band is causing significant encumbrances to consumers of the fast-growing and dynamic next-generation satellite broadband market. Clearly, ensuring the highest and best use of the 12 GHz Band should involve terminating the MVDDS licenses and sunsetting the service. The best and highest use of this spectrum does not involve providing windfall profits to spectrum speculators.

DISH's behavior should come as no surprise to the Commission, given DISH's long history as the world's largest spectrum hoarder. Industry analysts have concluded that DISH's spectrum licenses alone comprise the bulk of its equity value. While DISH stockpiles hundreds of megahertz of unused spectrum in its warehouse, all next-generation satellite systems combined have absolutely no exclusive rights to mid-band, low-band, or even high-band spectrum. Despite these asymmetric spectrum holdings, next-generation satellite systems have accomplished in just a few years what DISH has failed to do over multiple wireless generations—actually and quickly provide new service to desperately underserved and unserved Americans consumers.

Similarly, the second largest holder of MVDDS licenses—RS Access—is continuing its own pattern of serial spectrum flipping, resulting in no benefit to the public. RS Access acquired its MVDDS rights simply by entering into a lease deal just after its backers scored nearly a half-a-billion-dollar windfall in the broadcast incentive auction by quickly purchasing and flipping broadcast television stations. After this windfall, the backers of RS Access located their next target for spectrum speculation in MVDDS. Just months after its speculative lease agreement for MVDDS licenses, RS Access launched an intense lobbying campaign seeking its next bonanza. Tellingly, despite years of lobbying, RS Access has never explained how it—a small company that boasts only one employee on its website—could convert any new spectrum rights to a 5G network

that could serve consumers. Instead, RS Access has pointedly refused to provide any technical information to support its demands to be gifted new spectrum rights. This lack of confidence in its own studies is telling.

Given this history, the Commission should not expect the MVVDSS speculators to actually deploy a service, even if next-generation satellite services and satellite television were not already the highest and best use of the 12 GHz Band—which they are. The Commission was therefore right to reject DISH's and the other MVDDS licensees' request to evict cutting-edge, consumer-serving satellite systems from this band. Instead, the Commission put a high burden on the MVDDS licensees when it stated that new services in the 12 GHz band must protect customers of next-generation satellite operators. This test is made even harder by the fact that their own studies demonstrate conclusively that their demands cannot clear this high bar. As DISH itself demonstrated and stated emphatically as recently as December 2019, its hoped-for windfall is not technically possible without harming the consumers that already benefit from the use of this band. Neither DISH nor any other commenter in the extensive 12 GHz docket has pointed to a single technology developed since December 2019 that would render DISH's previous conclusion and technical studies wrong.

Notably, this round of comments will contain no critical analysis of any proposal from the MVDDS licensees. This lack of substance was not an accident, unfortunately, as the MVDDS licensees have in fact made no proposal consistent with the NPRM. Rather, RS Access has pointedly refused to provide any technical evidence to support bald claims about new technologies it has uncovered that would purportedly satisfy its demands without harming customers of next-generation satellite services. Instead of providing substance, DISH and RS Access have unveiled an astroturf "coalition" organized to distract from the deficiencies of their rent-seeking request

with pablum about the supposed benefits of granting them a handout. But their highly paid political spokesmen cannot hide the basic fact that next-generation satellite licensees have delivered on their promises and are already putting the spectrum to its highest and best use. In contrast, DISH and RS Access have nothing more than years of empty talking points and missed opportunities. Despite the shine on this new astroturf coalition, it still has presented nothing to overcome the high burden the Commission put on the MVDDS licensees of demonstrating how they can protect people actually using next-generation satellite services. Hand-waving about new unnamed antenna technologies is not data, and wishful thinking is not analysis.

Next-generation satellite services like those provided by SpaceX connect the unserved, increase competition as a new entrants, use innovative technologies that promote spectrum sharing, all while protecting consumer privacy. In contrast, DISH is a longtime incumbent that charges exorbitant prices for poor service and its new "coalition," stands in opposition to each of these clear public interest benefits. In fact, DISH itself has acknowledged that it chose SpaceX as the target of its aggressive lobbying campaign specifically because SpaceX "has commenced operations" to a greater extent than others and is "providing service in the U.S." Evidently, successfully providing service to Americans is enough to draw DISH's ire.

Unfortunately, some groups that purport to advocate for consumers have joined forces with DISH's misguided efforts. Yet, SpaceX remains optimistic that these groups will decide to instead embrace a more collaborative approach and work to find common ground. For instance, SpaceX agrees it is worthwhile to further study whether the 12 GHz Band can accommodate opportunistic low-power indoor uses. But such results are only possible through a truly collaborative approach.

Again, SpaceX applauds the Commission's focus on making sure all spectrum bands are being put to their highest and best use and encourages explorations of whether mid-band spectrum

like AWS-4 are being put to their best use. In the case of the 12 GHz Band, the answer is clear. The band will best serve the public through use for satellite TV and next-generation satellite services. SpaceX would also welcome further study of whether opportunistic, indoor low-power use of the band without harming other users of the band. But the best way to promote productive use of these high frequencies is to promptly remove the MVDDS encumbrances and free up more robust, high-quality broadband for more Americans.

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COMMENTS OF SPACE EXPLORATION HOLDINGS, LLC

I. INTRODUCTION

Space Exploration Holdings, LLC ("SpaceX") submits these comments in response to the Notice of Proposed Rulemaking ("NPRM") in the above-captioned proceeding in which the Federal Communications Commission ("Commission") seeks comment on how to ensure the 12.2-12.7 GHz band ("12 GHz Band") is being put to its highest and best use, which includes avoiding harmful interference to the consumers of next-generation satellite services.[1] These non-geostationary satellite orbit ("NGSO") Fixed-Satellite Service ("FSS") constellations, such as the one operated by SpaceX, are rapidly deploying broadband services to rural, unserved, and underserved communities. After years of debate and an already extensive record, two conclusions are clear: (1) the Multichannel Video and Data Distribution Service ("MVDDS") allocation in the band is an underutilized encumbrance to development of the band; and (2) granting the windfall of new rights sought by the MVDDS licensees would be devastating to

[1] *Expanding Flexible Use of the 12.2-12.7 GHz Band, Expanding Flexible Use in Mid-Band Spectrum Between 3.7-24 GHz, MVDDS Coalition Petition for Rulemaking to Permit MVDDS Use of the 12.2.12.7 GHz Band for Two-Way Mobile Broadband Service*, WT Docket No. 20-443, GN Docket No. 17-183, RM-11768 (Proceeding Terminated), Notice of Proposed Rulemaking, FCC 21-13 (2021) ("NPRM").

otherwise unserved consumers who depend on the 12 GHz Band for broadband and video service. The Commission recognized the importance of this band to provide service to otherwise unserved Americans when it voted to include the 12 GHz Band in the Rural Digital Opportunity Fund, which targeted more than five million homes and businesses in unserved urban and rural areas. In contrast, while advocates of opportunistic uses of spectrum have taken an unnecessary and counterproductive posture in this proceeding so far, SpaceX is hopeful that they may eventually engage in a dialogue about whether certain non-interfering low-power, indoor, opportunistic uses in the 12 GHz Band may be possible. Accordingly, the Commission should immediately eliminate the MVDDS allocation, decline to add new terrestrial mobile allocation, and leave open the possibility of studying whether other opportunistic uses are possible in the 12 GHz Band without harming customers of existing NGSO FSS and Direct Broadcast Satellite ("DBS") services.

II. BACKGROUND

The 12 GHz Band is home to an extensive sharing regime in the United States.[2] Specifically, the band is split among DBS, which uses the band to downlink video entertainment to subscribers; FSS, which are next-generation NGSO systems that downlink a wide array of services to customers;[3] and MVDDS for the provision of one-way digital fixed non-broadcast service.[4] Although these three services are co-primary, NGSO FSS and MVDDS operations are authorized on a non-harmful interference basis with respect to DBS. The Commission has further

[2] *See* 47 C.F.R. § 2.106.
[3] *See id.* at n.5.487A.
[4] *See id.* § 101.1407.

adopted a combination of technical limitations, information sharing requirements, and first-in-time procedures to enable sharing between NGSO FSS and MVDDS systems.[5]

In 2003, the Commission adopted a five-year substantial service requirement for MVDDS licensees, obligating such licensees to demonstrate substantial service before their licenses could be renewed. Despite the low bar for demonstrating substantial service, ten MVDDS licensees nonetheless requested a waiver for an extension of time to construct a service using their licenses.[6] Not one of the licensees mentioned the Commission's service rules as a cause for their failure to meet the requirements on their licenses. The Commission granted this request and afforded the MVDDS licensees an additional five years to demonstrate substantial service.[7] Yet even that was not sufficient, and the MVDDS licensees requested and received yet another extension in 2014.[8] In 2018, the Commission terminated 22 MVDDS licenses for failure to meet the substantial service standard, including 20 licenses held by the entity that later sold its remaining MVDDS license portfolio to RS Access LLC ("RS Access").[9] The remaining MVDDS licensees finally submitted substantial service showings in 2019.[10] These suspect demonstrations included installation of token transmitters and claims of providing weather services at a cost over 12 GHz, even though

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[5] *See id.* §§ 2.106 n.5.490, 25.139(a), 25.208(o), 101.103(f)(1), 101.105(a)(4)(i), 101.113(a) n.11, 101.129(b), and 101.147(p)(1).

[6] *See, e.g.*, ULS File No. 0003516339.

[7] *See Requests of Ten Licensees of 191 Licenses in the Multichannel Video and Distribution Service for Waiver of the Five-Year Deadline for Providing Substantial Service*, File Nos. 0003516339 *et al.*, Order, DA 10-1378 (WTB 2010).

[8] *See, e.g.*, ULS File No. 0006310385.

[9] *Requests of Three Licensees of 22 MVDDS Licenses for Extension of Time to Meet the Final Buildout Requirement et al.*, ULS File No. 0007219617 *et al.*, Order, DA 18-1109 (WTB 2018).

[10] *See, e.g.*, ULS File No. 0008735865.

the same services are available to the public for free without using the 12 GHz Band.[11] These showings remain pending before the Commission and should be denied as insufficient.

In the meantime, despite their repeated failure to meet even the most basic deployment requirements, a group of MVDDS licensees filed a petition for rulemaking (the "MVDDS Petition") in 2016 proposing that the Commission adopt a new mobile allocation in the 12 GHz Band and bestow those new mobile rights for free upon existing and otherwise failing MVDDS licensees.[12] Key to the proposal was that the MVDDS licensees believed, falsely, that the NGSO FSS allocation was "unused" and therefore argued that the Commission should "delete or designate as secondary" such allocation.[13] In support of their petition, the MVDDS licensees demonstrated definitively, with their own thorough technical analysis, that the requested mobile allocation was fundamentally incompatible with continued NGSO FSS operations in the band. For example:

- "MVDDS licensees *cannot* deploy two-way 5G services in the 12.2-12.7 GHz band without overwhelming NGSO FSS operations even under the current rules, notwithstanding new 5G deployment architectures and newly available high-resolution ground-obstacle data."[14]

- "[C]oexistence between MVDDS 5G operations and NGSO FSS operations is not possible without severe operational constraints on MVDDS, NGSO FSS or both services."[15]

- "The Coexistence Study further demonstrates that MVDDS licensees cannot deploy two way 5G services in the 12.2-12.7 GHz band without overwhelming NGSO FSS operations."[16]

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[11] *Id.*

[12] MVDDS 5G Coalition Petition for Rulemaking to Permit MVDDS Use of the 12.2-12.7 GHz Band for Two-Way Mobile Broadband Service, RM-11768 (filed Apr. 26, 2016) ("MVDDS Petition").

[13] *Id.* at 7, 22.

[14] *Id.*, Attachment I at 2 ("MVDDS Coexistence Study I").

[15] *Id.* at 35.

[16] Reply Comments of MVDDS 5G Coalition, RM-11768, at 12 (June 23, 2016).

- "For each of the three scenarios studied, we concluded that while coexistence between DBS and 5G MVDDS would prove feasible within limits, coexistence between NGSO FSS and 5G MVDDS would not prove feasible, without substantial constraints on one or both services."[17]

- "[T]he potential for sharing between next-generation MVDDS and NGSO MSS is virtually non-existent."[18]

In the nearly five years that this docket has been open, neither the MVDDS licensees nor any other party has submitted any engineering studies that contradict these conclusions. To the contrary, as recently as December 2019, DISH Network L.L.C. ("DISH"), which controls the largest group of MVDDS licenses, made clear that "concurrent sharing of spectrum between co-primary 5G and NGSO FSS operations is not viable in the 12 GHz Band."[19] Neither DISH nor anyone else has pointed to any technology developed in the past year that undermines DISH's recent and unequivocal conclusions that its requested windfall rights are incompatible with its obligations to avoid interference to co-primary NGSO FSS operations. While RS Access now claims to have such a study, the Commission must view such claims skeptically, given RS Access's decision to hide its secret studies until the absolute last minute, coupled with RS Access' spectrum speculations and financial motivations. If RS Access truly had confidence in its secret studies, it would have made its analysis public as soon as possible.

Nearly simultaneous with the filing of the MVDDS Petition, a potential NGSO FSS provider also filed an application to use the 12 GHz Band. The Commission was thus confronted with a stark choice: give a windfall to the MVDDS licensees that had thus far failed to use their licenses over a decade and a half or potentially enable a new generation of satellite systems.

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[17] *Id.* at Appendix A ("MVDDS Coexistence Study II").

[18] Petition to Deny of the MVDDS 5G Coalition, IBFS File No. SAT-LOI-20160428-00041, Exhibit 1 at 4 (Aug. 15, 2016).

[19] Letter from Alison Minea to Marlene H. Dortch, IBFS File No. SAT-MOD-20180319-00022, RM-11768, at 3 (Dec. 2, 2019).

Demonstrating impressive foresight, the Commission chose the latter, opening a new NGSO processing round and updating the rules for NGSO operations.

The Commission's decision paid off—dramatically. The new NGSO processing round helped to spawn the new golden age in space-based communications. The Commission authorized six next-generation NGSO systems to provide service in the U.S. using the 12 GHz Band.[20] Three of those systems—SpaceX, WorldVu Satellites Limited ("OneWeb"), and Kepler Communications, Inc. ("Kepler")—have already begun launching satellites. Indeed, less than two years after receiving its authorization, SpaceX has deployed over 1,500 satellites and initiated a beta version of its high-quality, low-latency broadband service. The Commission moved further away from the MVDDS Petition when it authorized SpaceX in 2020 for one million user terminals using the 12 GHz Band.[21] This decision has already paid dividends for the American people by enabling SpaceX to provide service to many tens of thousands of Americans, many of whom would otherwise have no access to high-quality broadband. And just recently, the Commission approved OneWeb to use 1.5 million user terminals in the 12 GHz Band.[22] In a further indication of its rejection of the proposals in the MVDDS Petition, the Commission unanimously chose to allow bidders in in the Rural Digital Opportunity Fund in 2020 to rely on the 12 GHz Band to meet their commitments to provide service across the country.

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[20] *See WorldVu Satellites Limited*, 32 FCC Rcd. 5366 (2017); *Space Norway AS,* 32 FCC Rcd. 9649 (2018); *Karousel Satellite LLC,* 33 FCC Rcd. 8485 (2018); *Space Exploration Holdings, LLC*, 33 FCC Rcd. 3391 (2018); *Kepler Communications Inc.*, 33 FCC Rcd. 11453, (2018); *Theia Holdings A, Inc.*, 34 FCC Rcd. 3526 (2019).

[21] *See* Radio Station Authorization, Call Sign E190066 (granted Mar. 13, 2020) ("SpaceX Blanket Earth Station Authorization").

[22] *See* Radio Station Authorization, Call Sign E190727 (granted Apr. 27, 2021).

The Commission finally rejected the proposals in the MVDDS Petition, when it issued the 12 GHz NPRM earlier this year. Notwithstanding that the MVDDS licensees continued to advocate for a grant of windfall rights that their own technical evidence demonstrates is inconsistent with the thriving next-generation satellite market, the Commission affirmatively and conclusively stated that incumbent operations like next-generation satellite broadband must be protected.[23] The NPRM instead asked how to put the 12 GHz Band to its highest and best use, providing an opportunity for the Commission to assess the wholesale failure of the MVDDS and its licensees, and begin taking steps to remove the MVDDS encumbrance from a band already being intensively used to deliver innovative, valuable services to the American consumer.

III. MAINTAINING AN MVDDS ALLOCATION IN THE 12 GHZ BAND IS NOT THE HIGHEST AND BEST USE OF THE SPECTRUM, ESPECIALLY CONSIDERING THE QUESTIONABLE ACTIONS OF THE MVDDS LICENSEES

As the MVDDS licensees demonstrated in their initial Petition, even their existing allocation is incompatible with the new, dynamic services provided by next-generation satellite systems.[24] But even if that were not the case, the MVDDS licensees have failed to meet even their minimal obligation to maintain their licenses. As SpaceX and others have found, the largest MVDDS licensee—DISH—appears to be actively seeking to prevent consumers from subscribing to its purported service and may, in fact, not be offering any service whatsoever in the band, despite its representations to the Commission in its substantial service showings. As such, these licenses should be terminated immediately, and the MVDDS allocation should be

[23] NPRM at ¶¶ 22-31.

[24] MVDDS Coexistence Study I at 34 ("NGSO receivers cannot operate within 11 kilometers of a current-generation MVDDS base station" without suffering harmful interference).

eliminated. By eliminating this unnecessary encumbrance, next-generation satellite systems will be freed to bring more robust high-quality broadband to otherwise unserved Americans.

A. Existing MVDDS Is Not the Highest and Best Use of the 12 GHz Band and the Commission Should Sunset the Service

By the MVDDS licensees' own admission—and, indeed, as the foundation of their petition requesting that the Commission provide them a windfall in the form of new terrestrial flexible use rights—MVDDS is "underutilized."[25] The Commission has given the MVDDS licensees more than a fair opportunity to succeed in the more than 20 years since the Commission created the service,[26] more than 15 years since the licenses were auctioned,[27] and the two separate extensions of the MVDDS buildout deadlines that the Commission has granted.[28] The more than decade and a half and the multiple chances provided notwithstanding, only one conclusion can be drawn—the MVDDS licensees are unable to provide a marketable service. The MVDDS Petition is itself proof of this fact. The MVDDS licensees based their request on the premise that their only way they could capitalize on their speculation on the MVDDS licenses was through the abandonment of the 12 GHz Band sharing regime the

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[25] MVDDS Petition at 6.

[26] *Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range et al.*, ET Docket No. 98-206 *et al.*, First Report and Order and Further Notice of Proposed Rulemaking, FCC 00-418 (2000) ("*2000 Order*").

[27] *Multichannel Video Distribution and Data Service Spectrum Auction Closes, Winning Bidders Announced*, Report No. AUC-04-53-G, Public Notice, DA 04-215 (WTB 2004); *Auction of Multichannel Video Distribution and Data Service Licenses Closes, Winning Bidders Announced for Auction No. 63*, Report No. AUC-05-63-F, Public Notice, DA 05-3164 (WTB 2005).

[28] *See Requests of Ten Licensees of 191 Licenses in the Multichannel Video and Distribution Service for Waiver of the Five-Year Deadline for Providing Substantial Service*, Order, 25 FCC Rcd 10097 (WTB 2010); *see also, e.g.*, Universal Licensing System File No. 0006310835 (extending the ten-year substantial service deadline an additional five years).

Commission carefully constructed, regardless of the effect on the customers of DBS and NGSO FSS providers.

The MVDDS licensees must have been aware of the rules when they speculated in the 12 GHz Band—the Commission was perfectly clear about the degree to which the limitations on MVDDS operations were "very conservative" to protect satellite operations, and adopted these limitations well in advance of the MVDDS auctions.[29] Indeed, this information certainly informed the bidding in the MVDDS auction and were reflected in the low prices the MVDDS licensees eventually paid. That the MVDDS licensees have failed to provide a reasonable service under the well-established rules is not a justification to pursue changes that threaten customers of services that are actually viable and providing value to American consumers. The Commission has long held in other contexts that Commission action is "not appropriate to protect [petitioners] from the outcome of a voluntary investment choice."[30] The Commission should take consistent action here, and decline to give a windfall to the MVDDS licensees at the expense of true new entrants that are actually putting the 12 GHz Band spectrum to productive use. In fact, the token transmitters that the MVDDS licensees claim to have deployed actually

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[29] *Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range et al.*, ET Docket No. 98-206 *et al.*, Memorandum Opinion and Order and Second Report and Order, FCC 02-116, at ¶ 43 (2002) ("*2002 Order*").

[30] *Commnet Supply LLC, Crossroads License Holding Sub A, and their successors in interest et al.*, Call Sign WQGH652, ULS File Nos. 0003818184, 0003805569, Memorandum Opinion and Order, FCC 19-125, at ¶ 29 (2019); *see also PCS Partners, L.P. Applications for Waiver and Limited Extension of Time et al.*, WT Docket Nos. 12-202, 12-229, Order on Reconsideration, DA 17-68, at ¶ 15 (WTB 2017) ("It is well-established that circumstances created by voluntary business decisions do not justify an extension of construction deadlines"); *Bristol MAS Partners, Request for Extension of Time in which to Construct and Place into Operation Multiple Address System Stations WPJF864 through WPJF870*, Order, DA 99-292 (PSPWD/WTB 1999) ("in its licensing of various wireless telecommunications services, the Commission has repeatedly ruled that business decisions made by licensees which ultimately prove misguided should not influence Commission determinations made in the course of managing the spectrum").

restrict deployment of next-generation satellite systems, potentially depriving otherwise unserved Americans in the areas surrounding such transmitters of high-quality broadband options.

B. The Commission Should Not Gift Terrestrial Flexible Use Rights to Parties Who Have Shown No Ability to, nor Interest in, Making Use of Valuable, Scarce Spectrum Resources

MVDDS licensees have had a decade and a half, and multiple extensions of their buildout deadlines, to put their licensed spectrum to good use. Despite this extended period of time and further relief from the Commission, MVDDS licensees may not be providing meaningful service, or even attempting to do so. Even taken at face value, the substantial service showings made by the MVDDS licensees—which have been pending for nearly two years—demonstrate that any service that is provided is minimal at best.[31] And although DISH has aggressively gone out of its way to antagonize true new entrants like SpaceX, it seems to have put extensive effort into ensuring that its own supposed use of the 12 GHz Band is completely hidden from consumers.[32] Specifically, as AT&T has observed:

> DISH advertises its MVDDS services on a website that is virtually impossible to find if one does not know exactly where to look for it. See http://DISH.com/mvdds. This website cannot be navigated to from the main DISH site, nor does a search for "MVDDS" on DISH's website produce any hits. Similarly, a Google search for DISH and MVDDS does not produce the site, and the site's source code appears to include code that would prevent a search engine from indexing the page. Only someone who knew the exact URL – such as a potential customer who decided to casually peruse DISH's ULS filings – would be able to find it. It is unclear why DISH would go to such lengths to prevent potential customers from learning about its MVDDS services, and one cannot help but wonder whether DISH is, in fact, transmitting on its spectrum if it goes to such lengths to repel potential customers. Further, DISH is charging $2.99 per month for the WeatherNation streaming service that is

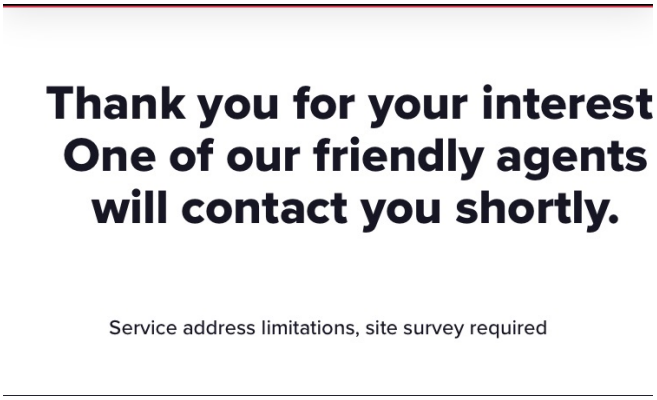
[31] Letter from Michael P. Goggin, AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC, RM-11768, at 6 (filed Oct. 16, 2020).

[32] *Id.* AT&T also correctly points out that DISH's flimsy buildout showings and apparent attempts to bury its MVDDS offering to the extent that no ordinary consumer would be able to discover and sign up for the service call into question the buildout showings of two other MVDDS licensees. *Id.*

available for free via WeatherNation's various apps – not exactly competitive pricing and pricing that would likely serve to discourage potential customers.[33]

SpaceX has independently confirmed these facts in just the last few weeks. Specifically, more than six months after AT&T documented these facts in the record, an Internet search for "MVDDS" still produces no results for the DISH MVDDS offering webpage, and the page is not accessible by navigating the DISH website menu, the DISH sitemap, or the DISH website search function.

SpaceX has further sought to determine whether and where in DISH's license areas a consumer could seek to sign up for MVDDS service on DISH's apparently concealed webpage, and has been unable to locate any address at which DISH's website returns a positive result for such an inquiry. In dozens of tests of a variety of addresses in service areas within eight different DISH MVDDS license areas, not one address tested provided the ability for the tester to sign up immediately for DISH's supposed service. Every test received the same response:



While a number of testers received follow up calls from DISH representatives, the service options were absurd. For instance, DISH claims to require a site survey before it will provide a service that costs $2.99. A nearly identical free service is available without a site survey. Or, the

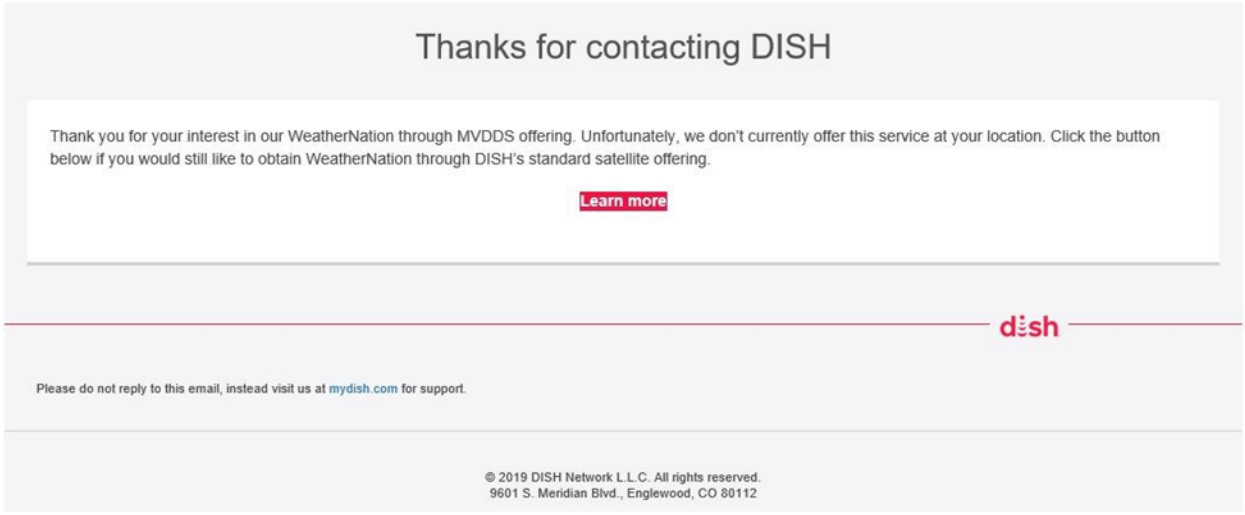
[33] *Id.*, n.19.

customers could sign up for a service for $3.99 that provides a single camera pointed at the customer's door, providing a live stream of the door that could not be accessed outside the house or recorded for later viewing. Most telling, both of these services required the customers to pay up to $400 for the equipment for this useless service. Apparently, DISH only plans to deploy MVDDS services if customers themselves pay for the network infrastructure.

And when a DISH representative did contact a customer, the representative seemed to try to talk customers out of purchasing the service, acknowledging that the requisite equipment would make the tester's house look like "Mickey Mouse" and saying that only a handful of people around the country had actually signed up for the service. If true, this latter statement appears to be inconsistent with DISH's claims in its 2019 substantial service showings that it had met the MVDDS safe harbor that requires "actual delivery of service to customers via four separate transmitting locations per million population" in each of its license areas.[34] Given this information, the Commission should require DISH to disclose immediately how many customers it has been serving using its MVDDS licenses.

These are not isolated results. DISH also refused to provide service to an inquiry in December 2019, even though the locations of the requests were within two kilometers of DISH's antennas, responding:

[34] *See, e.g.*, ULS File No. 0008735875; *see also 2002 Order* at ¶ 177.



These tests were conducted in multiple locations in the following DMAs: Washington, Los Angeles, CA; San Francisco-Oak-San Jose, CA, Houston, TX; Rochester, NY; Orlando-Daytona Beach-Melbourne, FL; and Seattle-Tacoma, WA. To protect the privacy of participants in these tests, SpaceX can provide further details to the Commission's Enforcement Bureau.

C. In Light of the History of MVDDS and its Licensees, and Their Repeated Failure to Make Any Productive Use of the 12 GHz Band, it is Clear That the Commission Should Sunset the Service or Designate It as Secondary to DBS and NGSO FSS.

DISH has a long and well-established history of viewing spectrum not as a scarce public good to be put to intensive use to the benefit of consumers, but instead as an asset to be warehoused to best suit its narrow interests. DISH's approach to terrestrial spectrum licenses has been clear since 2008, when it first acquired terrestrial spectrum at auction, which DISH's co-founder and chairman later characterized as being "a pretty good inflation hedge . . . If we're not able to strategically do something with the spectrum, there are probably other people who are able to do that."[35] Even after acquiring extensive terrestrial licenses, DISH made clear that it is

[35] TVNewsCheck, "NAB's Smith: DISH, TWC 'Hoarding' Spectrum" (Mar. 1, 2011), *available at* https://bit.ly/3nG8UDd (last accessed Apr. 30, 2021).

"primarily a satellite company" that does not want to "give the impression that we're this terrestrial company that's going to build out a bunch of terrestrial stuff that we don't understand."[36]

But while DISH rhetoric has pivoted, its strategies have not. DISH has continued to accumulate and warehouse additional spectrum resources with no apparent attempts to actually bring meaningful consumer services to market, all the while making promises it has no intention of keeping about its role as the next disruptive market entrant and its commitment to building out services. This has played out time and time again, in each of the spectrum bands identified below:

- MVDDS: Licensed in 2004, buildout deadline extended twice with little or no service to show for it, as described above.
- 700 MHz: Licensed in 2009, buildout deadline extended three times, with no service to show for it.
- AWS-4: Licensed in 2013, buildout deadline extended three times, with no service to show for it.
- AWS H Block: Licensed in 2014, buildout deadline extended twice, with no service to show for it.
- AWS-3: Licensed in 2015, no service yet deployed.
- 600 MHz: Licensed in 2017, interim buildout deadline eliminated, with no service yet to show for it.

And just last year, having insinuated itself into the Sprint-T-Mobile merger approval process, DISH promised the Commission that it could build out its 5G network if it was just allowed to add T-Mobile's divestitures to the vast amounts of spectrum already available to it and granted

[36] SpaceNews, "Ergen Sheds Faint Light on Plans for Newly Acquired DBSD" (May 3, 2011), *available at* https://bit.ly/2QDOdfk (last accessed Apr. 30, 2021).

relief from its impending buildout deadlines.[37] But once awarded those additional assets and granted yet more relief from its obligations to actually do something with its vast warehouse of unused spectrum, DISH once again resorted to its same game—now claiming the 12 GHz Band is necessary for its new terrestrial network that—like always—remains "just around the corner…." In fact, DISH has just in the past few days suggested to investors and analysts that it plans to seek yet *another* extension of its AWS-4, H-Block, 700 MHz, and 600 MHz buildout obligations.[38] Such an approach is unsurprising, given the fact that, despite DISH's historical failure to attempt to build out service using its spectrum use rights and complete lack of experience in terrestrial network deployment, industry analysts have concluded that DISH's spectrum use rights nevertheless comprise the bulk of its equity value.[39]

Indeed, instead of honoring its commitments to the Commission by building out its own network, DISH has followed the same pattern it has over the past decade: attack new entrants and hoard frequencies in its vast warehouse of unused spectrum. In the past 12 months, in this and other proceedings DISH has made 38 filings targeting SpaceX and its actually viable service alone, consisting of more than 300 pages, three new "studies" purporting to show DISH's predetermined outcomes, and demanded that the Commission impose a number of new

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[37] *See Applications of T-Mobile US, Inc., and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations et al.*, WT Docket No. 18-197 *et al.*, Memorandum Opinion and Order, Declaratory Ruling, and Order of Proposed Modification, FCC 19-103, at ¶¶ 364-83 (2019).

[38] *See, e.g.*, LightReading, "Ergen Hazy on DISH-AWS deal financials, 5G buildout costs" (Apr. 29, 2021) ("Ergen also suggested DISH might ask the government for a bit more time for the buildout . . . 'The timelines could be adjusted.'"), *available at* https://bit.ly/3eGWEhW (last accessed Apr. 30, 2021).

[39] *See, e.g.*, LightReading, "DISH drops 230K pay-TV subs in Q1" (Apr. 29, 2021) (quoting a prominent telecommunications industry analyst as stating that DISH's "satellite segment doesn't matter much anymore anyway, at least for equity valuation"), *available at* https://bit.ly/3t4QAVr (last accessed Apr. 30, 2021).

conditions on SpaceX's license.[40] In a moment of rare candor, DISH has acknowledged that this obsessive level of aggression against SpaceX is not despite the fact SpaceX is a new entrant, but specifically *because* SpaceX is a new entrant that is rapidly bringing high-quality, high-speed broadband service to otherwise unserved and underserved Americans.[41] The Commission should dismiss DISH's anticompetitive antics and attempts to distract from DISH's long-running strategy of continually moving the goalposts to further its speculation ploys without having to go to the trouble of actually delivering service to customers. Instead, the Commission should see if DISH can live up to even one of its oft-deferred promises rather than considering handing DISH yet more scarce spectrum to sit unused in its warehouse.

But DISH is not alone. RS Access similarly does not appear interested in providing actual service to consumers using its relatively recently acquired MVDDS licenses. RS Access makes much of the wide-area deployment in Albuquerque, New Mexico, which the Commission correctly noted is the only current wide-area commercial MVDDS deployment, despite the many years and many chances MVDDS licensees have had to prove the service's mettle.[42] However, RS Access elides the fact that the only deployment it can point to is one that the company inherited as a result of its speculative acquisition of MVDDS licenses from the previous licensee, and has since demonstrated no effort to make productive use of the 12 GHz Band in accordance

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[40] *See* WT Docket No. 20-443; RM-11768; IBFS File No. SAT-MOD-20200417-00037; WC Docket Nos. 09-197, 19-126; AU Docket No. 20-34.

[41] *See* Letter from Jeffrey H. Blum, Executive Vice President, External & Legislative Affairs, DISH Network Corporation, to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-MOD-20200417-00037, WT Docket No. 20-443, at 5 (filed Mar. 17. 2021) ("DISH March 2021 Letter") (admitting that DISH's efforts to leverage Commission processes to stifle SpaceX's ability to operate its system as authorized are due to the fact that "no other NGSO system has commenced operations to the same extent as SpaceX, and no one other than SpaceX has commenced providing service in the U.S.").

[42] NPRM at ¶ 40.

with the terms of its licenses. Further, RS Access provides no evidence that it needs 500 MHz of terrestrial flexible use rights in the 12 GHz Band to deploy 5G service, or could even do so if it wanted to.

As Commission records make clear, RS Access exists to serve as a front for speculation by a trust fund.[43] The company's backers have successfully run this playbook before. These same backers flipped broadcast television stations in the Commission's incentive auction, netting hundreds of millions of dollars with no benefit to the public.[44] Quickly after receiving this windfall, these backers leased the MVDDS licenses and then just as quickly launched an intense lobbying campaign to change the rules of the licenses at the expense of actual users of the spectrum.

RS Access is once again aiming to manipulate Commission processes to their own pecuniary benefit, rather than seeking to provide meaningful service to consumers and further the public interest. The company has no history of building networks or deploying service, and lists only a single employee on its website.[45] RS Access thus provides no reason for the Commission to believe that gifting 500 MHz of terrestrial flexible use rights to such an entity would serve the public interest or in any way facilitate the deployment of 5G or any other meaningful service (even assuming non-interference with satellite service were possible, which it is not).

As demonstrated above, neither DISH, with its vast warehouse of continually unused terrestrial spectrum use rights, nor RS Access, with no apparent intention or ability to do anything with spectrum use rights beyond flipping them, has demonstrated that gifting them

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[43] *See* RS Access LLC, FCC Form 602 Ownership Disclosure Filing, ULS File No. 0008487027.

[44] *See* Gryta, T., "Michael Dell Makes Millions in FCC's Airwaves Auction," WALL STREET JOURNAL (Apr. 13, 2017); Pressman, A., "How Michael Dell Just Profited from the FCC's Spectrum Sale," FORTUNE (Apr. 14, 2017).

[45] *See* https://www.rsawireless.com/management (last accessed Mar. 26, 2021).

terrestrial flexible use rights in the 12 GHz Band would serve the public interest or actually lead to 5G deployment. Instead, the Commission should terminate the MVDDS licenses and eliminate the MVDDS allocation.

IV. THE COMMISSION CORRECTLY DECIDED THAT NO ACTION SHOULD BE TAKEN UNLESS AND UNTIL IT IS DEMONSTRATED THAT NEXT-GENERATION SATELLITE USERS WILL BE PROTECTED

SpaceX applauds the Commission for unanimously and unequivocally finding that actual users of the 12 GHz Band, including SpaceX and other NGSO operators, must be protected from harmful interference.[46] The Commission correctly noted the "significant investments made by incumbents" and the "public interest benefits that could flow from investments made to provide satellite broadband services, particularly in rural and other underserved communities that might be more expensive to serve through other technologies" in making plain that any change to the 12 GHz rules must hold consumers of next-generation satellite services harmless.[47]

Indeed, the need for broadband connectivity in the U.S. has never been greater, as Americans increasingly rely on broadband for any number of services, from remote learning to telework to telehealth and more. The past year has painfully demonstrated that, while existing telecommunications networks have performed well to meet these needs in many areas, millions of Americans including those living in the most rural and remote areas remain on the wrong side of the digital divide. Powerful next-generation satellite systems that can reach all corners of the country are critical to bridging this gap. SpaceX is rapidly deploying a high-capacity, high-

[46] NPRM at ¶¶ 2, 19-20, 22-31.

[47] *Id.* at ¶ 2.

speed, low-latency satellite service that is advancing the Commission's goal of delivering broadband connectivity in the near term to all Americans.[48] This service is particularly critical for those consumers residing in the most remote, polar, and even urban regions of the country that are in need of the high-quality broadband that have been unavailable from terrestrial services so far. And based in part on its use of the 12 GHz Band, the Commission recently announced SpaceX as among the winning bidders in Phase I of the Rural Digital Opportunity Fund Auction.[49] SpaceX is proud to be part of this critical program and looks forward to exceeding all deployment milestones.

In contrast, as has been explained extensively by actual providers of 5G service, claims that the 12 GHz Band is suitable for 5G are misguided and inconsistent with the facts.[50] Instead, this band has become one of the most dynamic successes for providing broadband to consumers via next-generation satellite services, including those rural and hard-to-serve customers in urban broadband deserts who have gone unserved for too long. SpaceX is committed to providing high-speed, low-latency broadband service to unserved consumers across the country. Considering a change in the rules governing the 12 GHz Band at this late date would put these consumers at risk in exchange for no tangible benefits.

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[48] *See* Application of Space Explorations Holdings, LLC for Modification of Authorization for the SpaceX NGSO Satellite System, Call Signs S2983 and S3018, File No. SAT-MOD-20200417-00037 (granted Apr. 27, 2021).

[49] *See* Rural Digital Opportunity Fund Auction (Auction 904) Closes; Winning Bidders Announced, Public Notice, 35 FCC Rcd. 13888, Attachment A (WCB 2020).

[50] *See, e.g.*, Letter from Patrick R. Halley, Senior Vice President, Policy & Advocacy, USTelecom, to Marlene H. Dortch, Secretary, FCC, RM-11768, at 2 (filed Oct. 21, 2020) ("USTelecom October 2020 Letter") ("[N]ot all spectrum is a viable candidate for 5G, including the 12 GHz band. Where (1) substantial investments have been made by incumbents in reliance on FCC rules (changes to which could stifle continued investment), (2) millions of consumers are already benefitting from that investment and significant new investment and consumer adoption is on the horizon, (3) the technology already in use cannot be reconfigured once deployed, (4) there is nowhere for the incumbents to move and continue operating the service, and (5) the existing services cannot coexist with two-way mobile broadband service without causing harmful interference to the incumbents, it is safe to say that the 12 GHz band is not a good candidate for 5G.").

It is thus imperative, as the Commission correctly concluded in the NPRM, that NGSO FSS operators in the 12 GHz Band retain the ability to deliver these leading-edge, ubiquitously available broadband services throughout the U.S., free from interference caused by speculative new terrestrial operations.

A. The Record to Date Demonstrates that Two-Way Terrestrial Mobile Operations Cannot Be Enabled Without Harming Customers of Next-Generation Satellite Systems

As the Commission noted in the NPRM,[51] and as others have repeatedly explained since the MVDDS 5G Coalition first submitted its petition for rulemaking in 2016,[52] the record to date contains zero evidence that the MVDDS licensees' proposed expanded terrestrial use can be enabled while also protecting DBS and NGSO FSS incumbents. This protection is paramount. In fact, the MVDDS licensees have themselves reached this conclusion in the only technical analyses they have ever submitted in support of their request for windfall mobile use rights. The MVDDS 5G Coalition submitted in 2016 a technical report that found that "coexistence between NGSO FSS and MVDDS is not [possible] – perhaps not even under the current MVDDS rules."[53] This study found that 12 GHz high-power mobile devices could cause interference to NGSO FSS receivers at distances up to 32 kilometers, and that 5G base station operations at even the existing MVDDS power levels—which the Commission expressly set at a lower level to

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[51] NPRM at ¶ 13.

[52] *See, e.g.*, Response of Intelsat, RM-11768, at 2 (filed June 29, 2016); Opposition of SES, RM-11768 (filed June 8, 2016); Letter from Michael P. Goggin, AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-183, RM-11768 (filed June 14, 2018) ("AT&T June 2018 Letter"); Letter from Ruth Pritchard-Kelly, Vice President of Regulatory Affairs, OneWeb *et al.*, to Marlene H. Dortch, Secretary, FCC, RM-11768, at 2-4 (filed Oct. 10, 2020); USTelecom October 2020 Letter.

[53] MVDDS Coexistence Study I at 2.

protect to satellite operations—would require at least 11 kilometers of separation from NGSO FSS receivers.[54] The MVDDS licensees' own study thus found that "coexistence between MVDDS and NGSO FSS systems on coterminous frequencies in the same geographic areas is already impractical, if not infeasible."[55] A subsequent study submitted by the MVDDS 5G Coalition reiterated this finding.[56]

Neither DISH, nor RS Access, nor any other party has since submitted any analysis of any rigor whatsoever that might rebut these conclusions.[57] In fact, DISH argued as recently as December 2019 that "concurrent sharing of spectrum between co-primary 5G and NGSO FSS operations is not viable in the 12 GHz Band."[58] Instead, all available evidence further underscores the infeasibility of the MVDDS licensees' proposal and, if anything, demonstrates that their analyses are overly optimistic as to the mechanisms necessary to protect 12 GHz Band incumbents. SpaceX, for example, has pointed out that the MVDDS 5G Coalition technical report assumed unrealistic NGSO FSS receiver antenna discrimination, and that using relevant interference protection thresholds increased the requisite separation distance for a single 5G mobile device by a factor of ten.[59] Other parties similarly have pointed out that the MVDDS 5G Coalition's studies contain "numerous flawed premises, faulty assumptions, and internal

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[54] *Id.* at 33-34.

[55] *Id.* at 34-35.

[56] MVDDS Coexistence Study II at 2.

[57] *See, e.g.*, Letter from David Goldman, Director of Satellite Policy, SpaceX, to Marlene H. Dortch, Secretary, FCC, RM-11768 (filed Jan. 6, 2021) ("SpaceX January 2021 Letter") (noting the lack of any evidence indicating that mobile terrestrial service could be enabled in the 12 GHz Band while protecting DBS and NGSO incumbents).

[58] Letter from Alison Minea, DISH Network L.L.C. and SOUTH.COM LLC, to Marlene H. Dortch, Secretary, FCC, RM-11768, at 3 (filed Dec. 2, 2019).

[59] SpaceX January 2021 Letter at 5.

inconsistencies."[60] Even based on the overly optimistic and flawed technical studies in the record, SpaceX, OneWeb, and others have pointed out that the windfall rights sought by the MVDDS licensees are incompatible with NGSO FSS operations in the 12 GHz Band.[61]

Moreover, the MVDDS licensees' request ignores that the 12 GHz Band is already presently used by satellite services that, by their very nature, are ubiquitously available. With respect to NGSO FSS, the Commission has granted SpaceX an initial blanket earth station license for up to one million user terminals, which may also be relocated and reconfigured on an ongoing basis, and SpaceX has initiated service to U.S. customers using such terminals.[62] The ubiquity of 12 GHz Band incumbent services thus belies DISH's and RS Access's unsupported claims that co-channel sharing with mobile 5G service is feasible, because "[d]ifferent-operator, same-spectrum sharing between terrestrial and satellite operations is typically only feasible where one or both services is fixed and highly directional, and where strict technical rules are put into place to prevent harmful interference."[63]

Rather than support their claims with technical analyses, the MVDDS licensees have resorted to conclusory assertions and empty promises of forthcoming studies—and, even those phantom studies would have to contend with previous, vehement statements about the impossibility of non-interference. DISH, for example, after consistently arguing that sharing between NGSO FSS and 5G mobile services is infeasible, abruptly changed its tune and now contends that such sharing may be possible. But DISH provides no support for its changed

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[60] AT&T June 2018 Letter at 1.

[61] *See, e.g.*, Letter from David Goldman, Director of Satellite Policy, SpaceX, to Marlene H. Dortch, Secretary, FCC, RM-11768, at 3 (filed July 22, 2020); Reply of OneWeb, RM-11768, at 2-3, (filed June 23, 2016).

[62] *See* SpaceX Blanket Earth Station Authorization.

[63] AT&T June 2018 Letter at 3.

thinking, only vague references to technological advances and theoretical musings about what might be possible if NGSO FSS systems maintained highly elliptical orbits or otherwise operated in a way that resembled geostationary orbit satellites—which they do not.[64] Moreover, DISH claimed as recently as December 2019 that its requested windfall rights are not compatible with existing NGSO FSS services. Even DISH has not been able to conjure claims of any new technology developed in the past 15 months that render its previous statements false. Hand-waving about new antenna technologies is not data, and wishful thinking is not analysis.

RS Access has similarly come up empty-handed, despite its repeated promises that it would submit "analysis [that] indicates that spectrum sharing with SpaceX and other NGSO FSS licensees is feasible."[65] RS Access now claims to have finally unlocked the previously unattainable solution to granting them a windfall while protecting customers of other services in the band. Yet, despite repeated requests, no such analysis has materialized in the record to date, while RS Access's unsubstantiated claims are overwhelmed by the mountain of record evidence to the contrary. If RS Access truly believed that such a solution were possible, it would no doubt rush to make its studies public. Instead, this latest tactic appears to be more of the same empty promises and game playing.

The Commission correctly stated that it would not gift new rights to the MVDDS licensees without evidence that such rights would protect the customers of next-generation

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[64] *See, e.g.*, Letter from Jeffrey H. Blum, Executive Vice President, External & Legislative Affairs, DISH Network L.L.C., to Marlene H. Dortch, Secretary, FCC, RM-11768 (filed Nov. 12, 2020); Letter from Jeffrey H. Blum, Executive Vice President, External & Legislative Affairs, DISH Network L.L.C., to Marlene H. Dortch, Secretary, FCC, RM-11768 (filed Oct. 23, 2020).

[65] Letter from Trey Hanbury, Counsel to RS Access, LLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 20-443, Attachment at 1 (filed Feb. 8, 2021); *see also* ; Letter from Trey Hanbury, Counsel to RS Access, LLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 20-443, at 3 (filed Feb. 26, 2021); Letter from Trey Hanbury, Counsel to RS Access, LLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 20-443, at 2 (filed Feb. 19, 2021).

satellite services. Because no party has demonstrated in any substantive, reliable, verifiable manner that this windfall is possible while meeting the Commission's threshold requirement that expanded terrestrial services in the 12 GHz Band protect incumbent operations, the Commission should reject the MVDDS licensees' request to upend the carefully constructed 12 GHz sharing regime, eliminate the MVDDS allocation in the band, and close the proceeding.

B. DISH and RS Access's Arguments that NGSO FSS Operations Should Be Evicted from the 12 GHz Band Are Eviscerated by the Commission's Requirement that Incumbents Be Protected

While DISH and RS Access offer vague assertions regarding the feasibility of sharing between NGSO FSS and 5G mobile operations out of one side of their mouths, they also remain steadfast in their demands that NGSO FSS operations should be removed from the 12 GHz Band entirely. DISH, for example, claims that "[i]f the FCC were to repurpose the 12 GHz band for terrestrial 5G services, SpaceX would retain nearly 97% of all spectrum and nearly 94% of all space-to-earth spectrum made available for its proposed NGSO FSS system."[66] As an initial matter, the Commission has already rejected these arguments, expressly stating in reference to these claims that it is "focused on protecting incumbent licensees, including incumbent NGSO operators, from harmful interference in this proceeding."[67]

In any event, the rudimentary approach of counting hertz allocated to NGSO FSS and calling it an argument is deeply flawed. A better accounting of spectrum may be which operator has the most exclusive-use rights in the low-, medium-, and high-band frequencies. That more

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[66] Letter from Jeffrey Blum Executive Vice President, External and Legislative Affairs, DISH to Marlene H. Dortch, Secretary, FCC, Docket No. RM-11768, at Attachment, Spectrum Available to SpaceX Non-Geostationary Orbit Fixed-Satellite Service (NGSO FSS) (filed July 14, 2020).

[67] NPRM at ¶ 31.

accurate count would quickly reveal that DISH maintains the world's largest warehouses of this valuable, yet unused, resource, while SpaceX has none.

As SpaceX and others have explained, access to the entire 500 MHz of the 12 GHz Band is critical to supporting the operation of the more than 1,500—and growing rapidly with the Commission's recent unanimous approval of SpaceX's safety upgrade[68]—NGSO FSS satellites already deployed pursuant to the complex, shared use regime premised on inter-operator coordination between NGSO FSS licensees.[69] And SpaceX is already rapidly deploying the one million user terminals that the Commission authorized just last year to use the 12 GHz Band.[70] Furthermore, portions of the 12 GHz Band and the broader Ku-band and other spectrum assigned to NGSO FSS licensees carry additional constraints on NGSO FSS operations, which further underscore the inadequacy of DISH's and RS Access's inane counting exercise.[71]

DISH also has resorted to the equally absurd position of claiming that, because certain other countries authorize NGSO FSS use of the 12 GHz Band differently than does the Commission, the Commission should abandon the framework that has led to the rapid deployment and success of next-generation satellite services and instead implement DISH's requested mobile allocation, gifting DISH yet more spectrum rights that it can shop to investors and analysts without actually providing service to customers.[72] As an initial matter, the existence

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[68] *Space Exploration Holdings, LLC*, IBFS File No. SAT-MOD-20200417-0037, Order and Authorization and Order on Reconsideration, FCC 21-48 (2021).

[69] *See* Letter from Brian D. Weimer, Counsel, OneWeb, *et al.*, to Marlene H. Dortch, Secretary, FCC, RM-11768, at 2 (filed Oct. 23, 2020)

[70] *See* SpaceX Blanket Earth Station Authorization.

[71] *See* Letter from Paul Caritj, Counsel for Space Exploration Holdings, LLC, to Marlene H. Dortch, Secretary, FCC, RM-11768 (filed July 31, 2020).

[72] Letter from Pantelis Michalopoulos, Counsel to DISH Network Corporation, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 20-443 *et al.* (filed Apr. 23, 2021).

of different licensing regimes in different countries is neither a new development nor relevant to the Commission's consideration of the highest and best use of the 12 GHz Band in the United States. Nor, of course, is protecting SpaceX and other NGSO FSS operators' in accordance with the Commission's rules and the terms of NGSO FSS authorizations a grant of "unfettered" or "unconstrained" access to the 12 GHz Band;[73] to the contrary, and as noted above, such operations already take place under significant constraints imposed by the Commission's rules and licensing decisions. Furthermore, it is the height of hypocrisy for DISH, which initiated this proceeding by making the demonstrably false claim that the NGSO FSS allocation was "unused" and relying on that mischaracterization to claim that the allocation should be eliminated, to now claim that the Commission should base its decision-making process on the existence of a partial international mobile allocation which is itself unused the world over.[74] DISH's glass warehouses shattered long ago under the strain of the stones it continues to cast. In any event, DISH ignores—as it must to attempt to introduce yet more distraction into the record—that the Commission has already expressly stated that any action in the proceeding must ensure that incumbents such as SpaceX must be protected. DISH's cherry-picked and context-free characterizations of SpaceX's rights in other jurisdictions have no bearing whatsoever on the core issue before the Commission.

Finally, and most fundamentally, DISH and RS Access have utterly failed to identify—because they cannot—suitable and available alternative spectrum for SpaceX and other NGSO FSS operators to use for consumer downlinks or how such a relocation could possibly work. Instead, DISH and RS Access effectively ask the Commission to strand consumers that use

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[73] *Id.* at 1, 2.

[74] *Id.* at 2.

actual, real-world next-generation broadband services, to generate a windfall that will pay off their long-running speculation efforts. The Commission should see these arguments for what they are, and reject them as such.

C. Study of Indoor or Other Opportunistic Use in the 12 GHz Band May be Possible if its Proponents Decide to Work Collaboratively Rather than Antagonistically

SpaceX has offered, in the record and elsewhere, to explore options for sharing the 12 GHz Band more extensively, so long as the proposed use is technically feasible—unlike the windfall mobile use rights sought by the MVDDS licensees. For instance, SpaceX welcomes further study of whether low-power indoor use of the band may be possible without harming consumers of existing services.

As SpaceX has previously explained, in the scattered bands in which they are authorized to operate, NGSO FSS operators must share their spectrum with radio astronomy operations, Federal users like the Department of Defense, other NGSO FSS operators, geostationary satellite operators, terrestrial 5G systems, and others. To accommodate the myriad users in these bands, NGSO FSS operators must lower power levels, work around large geographic exclusion zones, split spectrum, or entirely avoid channels in which they are nominally authorized to operate. Yet, despite these limitations, NGSO FSS operators like SpaceX have developed cutting-edge technologies that allow them to provide advanced broadband services to consumers. And while no party has proposed any mechanism to date to effectively add additional services to the 12 GHz Band while protecting users of existing services, SpaceX welcomes the opportunity to work with parties willing to explore additional opportunistic uses of the band.

In the NPRM, the Commission seeks comment on the degree to which unlicensed and opportunistic use of the 12 GHz Band might provide a feasible path to expanded terrestrial use of

the spectrum.[75] Given the ubiquity of NGSO FSS service (as well as DBS service) and the fact NGSO FSS signals at the Earth's surface are already below the noise floor, any unlicensed underlay would likely need to be based on new approaches, rather than existing mechanisms.[76] Specifically, existing mechanisms were developed in bands with entirely different technical characteristics and services. Yet, SpaceX welcomes further study on whether it may be possible to develop new opportunistic uses that are better tailored to the specific limitations of the 12 GHz Band. While the characteristics of the 12 GHz Band mean that transmissions at high power can cause interference through obstructions like walls, at lower power, some indoor use may be possible under certain circumstances.

The viability of new opportunistic uses is also contingent on other factors. For instance, the elimination of the MVDDS encumbrances may free up more possibilities for new services. On the other hand, any opportunity for further opportunistic use would be all but eliminated if DISH were to succeed in its anti-competitive attempt to hamstring new entrants by further reducing the equivalent power flux density limits.[77]

Furthermore, some parties have proposed a database-enabled approach that would raise serious privacy concerns for the millions of consumers that already use the 12 GHz Band.[78]

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[75] NPRM at ¶ 39.

[76] *See* Letter from Harold Feld, Senior Vice President, Public Knowledge, to the Honorable Ajit Pai, Chairman, FCC, RM-11768, at 3 (filed July 9, 2020) ("Certainly, the presumption is that any expanded spectrum rights or other terrestrial use of the band must be secondary to existing incumbent satellite users."); *see also Unlicensed Use of the 6 GHz Band et al.*, ET Docket No. 18-295 *et al.*, Report and Order and Further Notice of Proposed Rulemaking, FCC 20-51 (2020) (restricting new unlicensed operations in the U-NII-6 and U-NII-8 6 GHz sub-bands to low-power, indoor-only use in order to protect sensitive, ubiquitous incumbent services such as electronic newsgathering).

[77] *See, e.g.*, DISH March 2021 Letter.

[78] *See, e.g.*, Letter from Martha Suarez, President, Dynamic Spectrum Alliance, to Marlene H. Dortch, Secretary, FCC, RM-11768 (filed Aug. 21, 2020).

Despite vague and unsubstantiated claims, these parties have yet to provide any detail regarding how such a database would work in the 12 GHz Band. And with good reason. While the Commission has employed database-enabled sharing regimes in certain circumstances,[79] it has never done so to enable sharing in a band with ubiquitously deployed consumer links such as the 12 GHz Band. Instead, the Commission has focused—correctly—on bands with limited incumbent deployments, in fixed locations, to be protected.[80] The practical impediments alone indicate the degree to which a database is unlikely to work in the 12 GHz Band—for instance, there are millions of DBS receivers throughout the U.S., which are subject to relocation at any time by consumers, and many of which are on recreational vehicles or other mobile platforms.[81] NGSO FSS user terminals likewise may be ubiquitously deployed,[82] and this problem will only become more complex as NGSO FSS incumbents continue to deploy satellites and user terminal deployments densify.

Moreover, the database approaches proposed in the record thus far are wholly distinct from the databases NGSO FSS licenses are currently required to maintain under the Commission's Part 101 rules.[83] The current databases are not shared with third parties in real time. In fact, SpaceX has never received a request for access to its database from an MVDDS licensee (which, of course, further underscores the degree to which MVDDS licensees have

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[79] *See Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, FCC 15-47 (2015); *Unlicensed Operation in the TV Broadcast Bands et al.*, ET Docket No. 04-186 *et al.*, Second Memorandum Opinion and Order, FCC 10-174 (2010).

[80] *See* Letter from David Goldman, Director of Satellite Policy, SpaceX, to Marlene H. Dortch, Secretary, FCC, RM-11768 (filed Nov. 6, 2020).

[81] *See* AT&T June 2018 Letter.

[82] *See* SpaceX Blanket Earth Station Authorization.

[83] *See* 47 C.F.R. § 101.103(f); *see also 2002 Order* at ¶ 124.

failed to deploy any meaningful service). The Commission should not consider any proposals that rely on untested, undeveloped technologies that can jeopardize consumer privacy.

Nonetheless, while databases remain an unrealistic solution, SpaceX remains open to further study of proposals for sharing the 12 GHz Band that may be more practical for facilitating opportunistic use of this band, such as low-power indoor use. But progress can be made only if the proponents of these services cease their antagonistic postures and embrace productive collaboration.

V. CONCLUSION

For the foregoing reasons, the Commission should reject the disingenuous attempts by DISH, RS Access, and the other MVDDS licensees to turn their failure to make any productive use of their licenses into a windfall. Instead, the Commission should ensure that the 12 GHz Band is put to its highest and best use by eliminating the harmful MVDDS encumbrance. The Commission should also act consistent with its commitment to protect operators of next-generation satellite services in the 12 GHz Band like SpaceX that are actually providing valuable service to customers. The Commission can best do so by rejecting the calls by the MVDDS licensees to abandon the framework that has led to a flourishing, U.S.-led market for next-generation satellite broadband services, and reaffirm the primacy of incumbent NGSO FSS satellites in the 12 GHz band. SpaceX urges the Commission to take these steps quickly, which will best serve the public interest and ensure that the Commission's policies continue to incent licensees to make productive use of their spectrum rights, and not to warehouse them in the hopes of some future payoff.

Respectfully submitted,

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